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Letter to the Editor

Malignant Melanoma and Charcot-Marie-Tooth Disease: A Further Case

To the Editor:

In a previous issue of this journal, Greene et al. [1980] described 2 patients with Charcot-Marie-Tooth (CMT) disease who later developed cutaneous malignant melanoma. Although the development of the two diseases in the same patient may have occurred by chance, the authors raised the possibility of a shared neural crest defect or a genetic linkage.

Among the patients reported by Greene et al. [1980], one had a dominant form of CMT. The patient's mother and brother were similarly affected. A paternal aunt died of melanoma. The second patient had a neuronal type of CMT. His brother showed the same disease, but the parents were not examined.

Our case involves a 29-year-old woman who came to our Clinical Genetic Unit for an assessment of her reproductive risk. Family history showed that her brother was affected by CMT [hereditary motor-sensory neuropathy (HMSN) type II] as indicated by electromyography (EMG) and sural nerve biopsy. Neurological examination of the proposita showed moderate reduction of the osteotendinous reflexes on the lower limbs; the EMG showed a slow nerve conduction (particularly in the right peroneal nerve). On this basis the patient was given the diagnosis of CMT (HMSN type II).

Personal history showed that she had undergone a surgical removal of a pigmented malignant melanoma from the left flank at age 26 years. Microscopically epithelioid cells were described; no invasion of the dermoepidermal junction was observed, suggesting the diagnosis of intraepidermal melanoma. Chemotherapy was not given.

The parents of our patient were normal on neurological examination and following EMG.

Charcot-Marie-Tooth disease shows clinical variability and genetic heterogenity [Dyck and Lambert, 1968a,b]. It was proposed that the forms of CMT with very slow nerve conduction be given the gene symbols CMT1A and CMT1B CMT1A being the gene on chromosome arm 17p, and CMT1B being the gene on chromosome arm 1q. CMT2 was the proposed symbol for the autosomal locus responsible for moderately slow nerve conduction form of the disease. The genetic types CMT1A, CMT1B, and CMT2 relate to the clinical types abbreviated HMSNIA, HMSNIB, and HMSN-II [McKusick, 1994]. The designation CMT2, or HMSN-II, should be confined to inherited axonal neuropathy (Harding, personal communication); this gene is on chromosome arm 1p.

Our case further suggests a causal association between Charcot-Marie-Tooth disease and malignant melanoma. It is interesting that, although heterogeneity is demonstrated, the most favored location of one of the CMT2 genes is on chromosome 1 within the region p35–p36 [Ben Othmane et al., 1993]; one of the cutaneous malignant melanoma genes (CMM1) also maps to chromosome band 1p36 [Dracopoli et al., 1989; Goldstein et al., 1993].

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